

R315. Environmental Quality, Solid and Hazardous Waste.

R315-303. Landfilling Standards.

R315-303-1. Applicability.

The ~~see~~ standards of Rule R315-303 apply to:

- (1) Class I, II, and V Landfills;
- (2) Class III Landfills as specified in Rule R315-304; and
- (3) Class IV, and VI Landfills as specified in Rule R315-305.

R315-303-3. Standards for Design.

(1) Minimizing Liquids. An owner or operator of a landfill shall minimize liquids admitted to active areas by:

- (a) covering according to Subsection R315-303-4(4);
- (b) prohibiting the disposal of containerized liquids larger than household size, noncontainerized liquids, sludge containing free liquids, or any waste containing free liquids in containers larger than household size;
- (c) designing the landfill to prevent run-on of all surface waters resulting from a maximum flow of a 25-year storm into the active area of the landfill; and
- (d) designing the landfill to collect and treat the run-off of surface waters and other liquids resulting from a 25-year storm from the active area of the landfill.

(e) If the owner or operator of a landfill has received a storm water permit as issued by the Utah Division of Water Quality and is meeting the requirements of the permit, the landfill may be exempt, upon approval of the Executive Secretary, from the run-on and run-off control requirements of Subsections R315-303-3(1)(c) and (d).

(2) Leachate Collection Systems.

(a) An owner or operator of a landfill required to install liners shall:

(i) install a leachate collection system sized according to water balance calculations or using other accepted engineering methods either of which shall be approved by the Executive Secretary;

(ii) install a leachate collection system so as to prevent no more than one foot depth of leachate developing at any point in the bottom of the landfill unit; and

(iii) install a leachate treatment system or a pretreatment system, if necessary, in the case of discharge to a municipal water treatment plant.

(b) The returning of leachate to the landfill or the recirculation of leachate in the landfill may be done only in landfills that have a composite liner system or an approved equivalent liner system.

(3) Liner Designs. An owner or operator of a landfill shall use liners of one of the following designs:

(a) Standard Design. The design shall have a composite liner system consisting of two liners and the associated liner protection layers and a drainage system for leachate collection:

(i) an upper liner made of synthetic material with a thickness of at least 60 mils; and

(ii) a lower liner of at least two feet thickness of recompacted clay or other soil material with a permeability of no more than 1×10^{-7} cm/sec having the bottom liner sloped no less than 2% and the side liners sloped no more than 33%, except where construction and operational integrity can be demonstrated at steeper slopes, with the synthetic liner installed in direct and uniform contact with the compacted soil component; or

(b) ~~Alternative~~ Equivalent Design.

(i) The Executive Secretary may approve an equivalent liner design, on a site specific basis, if it can be documented that, under the conditions of location and hydrogeology, the ~~[performance standard of Subsection R315-303-2(1) can be met]~~ equivalent design will minimize the migration of solid waste constituents or leachate into the ground or surface water at least as effectively as the liner design required in Subsection R315-303-3(3)(a).

(ii) When approving an ~~[alternative]~~ equivalent liner design, the Executive Secretary shall consider the following factors:

(A) the hydrogeologic characteristics of the facility and surrounding land;

(B) the climatic factors of the area; and
(C) the volume and physical and chemical characteristics of the leachate; or

(c) ~~[Equivalent]~~ Alternative Design.

(i) The owner or operator may use, as approved by the Executive Secretary, an alternative design ~~[, operating practices, and location characteristics which will minimize the migration of solid waste constituents or leachate into the ground or surface water which are at least as effective as the liners of Subsections R315-303-3(3)(a) or (b)]~~.

(ii) The owner or operator must demonstrate that the ground water quality protection standard of Subsection R315-303-2(1) can be met. The demonstration must be approved by the Executive Secretary, and must be based upon:

(A) the hydrogeologic characteristics of the facility and the surrounding land;

(B) the climatic factors of the area;

(C) the volume and physical and chemical characteristics of the leachate;

(D) predictions of contaminate fate and transport in the subsurface that maximize contaminant migration and consider impacts on human health and the environment; ~~[or]~~ and

(E) predictions of leachate flow from the base of the waste to the uppermost aquifer; or

Changes in the Equivalent Design and the Alternative Design make it clear that an equivalent design is to be measured against the standard design and must perform as well as the standard design (allow approximately the same or less leachate to pass through) while the Alternative Design is tested against the performance criteria, as listed above, and must protect ground water. The amount of leachate that passes through the bottom liner is not the critical factor but whether that leachate will contaminate ground water.

(d) Stringent Design. When conditions of location, hydrogeology, or waste stream justify, the Executive Secretary may require that the liner of a landfill be constructed to meet standards more stringent than the liner designs of Subsection R315-303-3(3)(a).

(e) Small Landfill Design.

(i) The small landfill design applies only to a Class II Landfill.

(ii) ~~[Subject to]~~ Each new Class II Landfill and any existing Class II Landfill seeking facility expansion shall meet the location standards of Section R315-302-1. ~~[and]~~

(iii) Each new and existing Class II Landfill shall meet the performance standards of Section R315-303-2. ~~[, a]~~

(iv) A Class II Landfill, [may be] which meets the requirements of R315-303-3(3)(e)(v), is exempt from the liner, leachate collection system, and ground water monitoring requirements of Rule R315-303.

The above changes are made to mirror the exemption for small landfills specified in the Federal requirements, 40 CFR 258.2(f)(1).

~~[(iii)]~~ (v) A Class II Landfill will be approved only if:

(A) there is no evidence of existing ground water contamination; ~~[and]~~

(B) the landfill serves a community that has no practicable waste management alternative as determined by the Executive Secretary; ~~[and]~~

(C) the landfill is located in an area which receives less than 25 inches of annual precipitation ~~[,]~~;

(D) the landfill receives, on a yearly average, no more than 20 tons of waste per day, or if a tonnage cannot be determined, serves a population of no more than 8,900; and

(E) the landfill meets all the requirements in R315-301 through 320 applicable to Class II landfills.

The above changes include the requirement to dispose of 20 tons of waste or less per day and to clarify that Class II landfills must meet all requirements

of the rules not just this section.

~~[(iv)]~~ (vi) A Class II Landfill may lose the exemptions of the small landfill design if at anytime the landfill receives more than 20 tons of solid waste per day, based on an annual average, or has caused ground water contamination.

(4) Closure. At closure, an owner or operator of a Class I, II, IIIa, IVa, and V Landfill shall use one of the following designs for the final cover.

(a) Standard Design. The standard design of the final cover shall consist of two layers:

(i) a layer to minimize infiltration, consisting of at least 18 inches of compacted soil, or equivalent, with a permeability of 1×10^{-5} cm/sec or less, or equivalent, shall be placed upon the final lifts;

(A) in no case shall the cover of the final lifts be more permeable than the bottom liner system or natural subsoils present in the unit; and

(B) the grade of surface slopes shall not be less than 2%, nor the grade of side slopes more than 33%, except where construction integrity and the integrity of erosion control can be demonstrated at steeper slopes; and

~~[(i)]~~ (ii) a layer to minimize erosion, consisting of:

(A) at least 6 inches of soil capable of sustaining vegetative growth placed over the compacted soil cover and seeded with grass, other shallow rooted vegetation or other native vegetation; or

(B) other suitable material, approved by the Executive Secretary.

(b) Requirements for any Earthen Final Cover at a Landfill.

(i) Markers or other benchmarks shall be installed in any final earthen cover to indicate the thickness of the final cover. These markers shall be observed during each quarterly inspection and the earthen cover shall be raised to the appropriate thickness as necessary.

(ii) Erosion channels three inches deep, or greater, in final earthen covers that are greater than two feet in thickness and erosion channels of 10% of the thickness, or greater, in covers less than two feet in thickness shall be repaired within 72 hours of their discovery.

The above standards are set to ensure the continued structural and functional integrity of the final cover at a landfill.

~~[(b)]~~ (c) Alternative Design. The Executive Secretary may approve an alternative final cover design, on a site specific basis, if it can be documented that:

(i) the alternative final cover achieves an equivalent reduction in infiltration as ~~[specified as]~~ achieved by the standard design in Subsection R315-303-3(4)(a)(i); and

(ii) the alternative final cover provides equivalent protection from wind and water erosion as ~~[specified as]~~ achieved by the standard design in Subsection R315-303-3(4) ~~(b)~~ (a)(ii).

(d) The expected performance of an alternative final cover design shall be documented by the use of an appropriate mathematical model.

(i) The input for the modeling shall include the climatic conditions at the specific landfill site and the soil types that will make up the final cover.

(ii) The model shall:

(A) be run to show the expected performance of the final cover at normal precipitation for a period of time until stability has been reached; and

(B) shall be run to show the expected performance of the final cover during the five wettest years recorded at the site or the nearest weather station; and

(C) shall be run to show the expected performance of the final cover during the five driest years recorded at the site or the nearest weather station.

(e) The Executive Secretary shall use the following criteria as part of the basis for determining if an alternative final cover will be approved:

(i) If the landfill has a liner design that does not use a synthetic

material such as HDPE, the model will compare the infiltration through the standard cover as required in R315-303-3(4)(a) and shall show that the alternative cover performs as well as the standard cover; or

(ii) If the landfill has a liner composed in part of a synthetic material such as HDPE, the model must show an infiltration rate of no greater than 3 millimeters of water per year during any year of the model run.

Requests to install alternative final earthen covers at landfills are becoming more common than requests to install the standard final cover. The above rule change specifies the minimum standards for modeling required to show that the alternative final earthen cover design achieves an equivalent reduction in infiltration as the standard design.

~~[(e)]~~ (f) If a landfill has been constructed using an approved alternative landfill design~~[, including a waiver, or exemption, from the liner or ground water monitoring requirements]~~, the Executive Secretary may require, on a site~~[-]~~-specific basis, the landfill closure design to be~~[-a]~~ more stringent~~[-design]~~ than the standard design specified in Subsection R315-303-3(4)(a) to protect human health or the environment.

~~[(d)]~~ (g) In no case shall any modification be made to the final cover, as placed and approved at closure by the Executive Secretary, unless that modification:

- (i) is a necessary repair of the approved final cover;
- (ii) maintains or improves the effectiveness of the final cover; and
- (iii) is approved by the Executive Secretary.

(5) Gas Control.

(a) An owner or operator shall design each landfill so that explosive gases are monitored quarterly.

(b) If the concentration of these gases ever exceed the standard set in Subsection R315-303-2(2)(a), the owner or operator must:

(i) immediately take all necessary steps to ensure protection of human health and, within 24 hours or the next business day, notify the Executive Secretary;

(ii) within seven days of detection, place in the operating record the explosive gas levels detected and a description of the steps taken to protect human health; and

(iii) within 60 days of detection, implement a remediation plan, that has been approved by the Executive Secretary, for the explosive gas release, place a copy of the plan in the operating record, and notify the Executive Secretary that the plan has been implemented.

(c) Collection and handling of explosive gases shall not be required if it can be shown that the explosive gases will not support combustion.

(d) The Executive Secretary may, on a site specific basis, waive the requirement of monitoring explosive gases at a Class II Landfill. The waiver may be granted after:

(i) considering the characteristics of the landfill and the waste stream accepted;

(ii) taking into account climatic and hydrogeologic conditions of the site; and

(iii) completing a public comment period as specified by Section R315-311-3.

(iv) The Executive Secretary may revoke any waiver from the requirement of monitoring explosive gases if the lack of monitoring explosive gases at the landfill presents a threat to human health or the environment.

(v) The requirement to monitor explosive gases inside buildings at a landfill may not be waived.

(e) A landfill that accepts no municipal waste is exempt from the gas monitoring requirement of Subsection R315-303-3(5)(a).

(6) Design Drawings.

(a) Design drawings and as built drawings of any engineered structure, including landfill liners, leachate collection systems, run-on/run-off control systems, final covers, ground water monitoring systems, and gas collection systems, shall be signed and sealed by a professional engineer registered in

the State of Utah.

(b) As built drawings shall be submitted to the Executive Secretary on or before 90 days following the completion of the engineered structure at the landfill.

(7) Other Requirements. An owner or operator shall design each landfill to provide for:

(a) fencing at the property or unit boundary or the use of other artificial or natural barriers to impede entry by the public and large animals. A lockable gate shall be required at the entry to the landfill;

(b) monitoring ground water according to Rule R315-308 using a design approved by the Executive Secretary. The Executive Secretary may also require monitoring of:

(i) surface waters, including run-off;

(ii) leachate; and

(iii) subsurface landfill gas movement and ambient air;

(c) weighing or estimating the tonnage of all incoming waste and recording the tonnage in the facility's operation record;

(d) erecting a sign at the facility entrance that identifies at least the name of the facility, the hours during which the facility is open for public use, unacceptable materials, and an emergency telephone number. Other pertinent information may also be included;

(e) adequate fire protection to control any fires that may occur at the facility. This may be accomplished by on-site equipment or by arrangement made with the nearest fire department;

(f) preventing potential harborage in buildings, facilities, and active areas of rat and other vectors, such as insects, birds, and burrowing animals;

(g) minimizing the size of the unloading area and working face as much as possible, consistent with good traffic patterns and safe operation;

(h) approach and exit roads of all-weather construction, with traffic separation and traffic control on-site and at the site entrance; and

(i) communication, such as telephone or radio, between employees working at the landfill and management offices on-site and off-site to handle emergencies.

R315-303-4. Standards for Maintenance and Operation.

(1) Plan of Operation. An owner or operator of a landfill shall maintain and operate the facility to conform to the approved plan of operation.

(2) Operating Details. An owner or operator of a landfill shall operate the facility to:

(a) control fugitive dust generated from roads, construction, general operations, and covering the waste;

(b) allow no open burning;

(c) collect scattered litter as necessary to avoid a fire hazard or an aesthetic nuisance;

(d) prohibit scavenging;

(e) conduct on-site reclamation in an orderly sanitary manner and in a way that does not interfere with the disposal site operation;

(f) ensure that landfill personnel, trained in landfill operations, are on-site when the site is open to the public;

(i) at least one person on-site for landfills that receive, on an average annual basis, less than 15,000 tons per year; and

(ii) at least two persons on-site, with one person at the active face, for each landfill that receives, on an average annual basis, more than 15,000 tons per year.

(g) control insects, rodents, and other vectors; and

(h) ensure that reserve operational equipment will be available to maintain and meet these standards.

(3) Boundary Posts. An owner or operator of a landfill shall clearly mark the active area boundaries authorized in the permit with permanent posts or using an equivalent method clearly visible for inspection purposes.

(4) Daily and Intermediate Cover.

(a) An owner or operator of a landfill shall, at the close of each day of operation, completely cover the waste with at least six inches of soil or

~~[other suitable material]~~an alternative daily cover ~~[approved by the Executive Secretary]~~as allowed in R315-303-4(4)(b) through (e).

(b) The following are approved for use as alternative daily covers, subject to the conditions contained in R315-303-4(4)(c) unless otherwise noted: non-hazardous contaminated soil and is not subject to the conditions of R315-303-4(4)(c); tarps; plastic sheets, when designed for landfill cover use; foam products, when designed for landfill cover use; products created from cement kiln dust, when designed for landfill cover use; incinerator ash; non-hazardous auto shredder residue not otherwise regulated by 40 CFR Part 761; chipped waste tires; and spray on materials, when designed for landfill cover use.

(c) The use of an approved alternative daily cover is subject to the following conditions:

(i) the alternative daily cover may not present a threat to human health or the environment; and

(ii) the alternative daily cover may be used only on a schedule as established by the ~~[Executive Secretary]~~ facility owner or operator and recorded in the facility operating record.

(iii) The schedule for use of the approved alternative cover shall be established based on the alternative cover's performance in controlling vectors, fires, odors, blowing liter, and scavenging[-], and must meet the following requirements:

(A) any schedule established by the facility owner or operator must provide for the placing of six inches of soil cover at least once per week;

(B) no approved alternative daily cover may be used on the day preceding a day the landfill will be closed;

(C) No alternative daily cover may be used on an area of the landfill that will not be covered with waste or an intermediate cover, as required in R315-303-4(4)(g), within two days; and

(D) The Executive Secretary may require the use of six inches of soil cover upon finding that use of an alternative cover is not controlling vectors, fires, odors, blowing liter or scavenging.

(iv) The landfill operating record must clearly document the days when an alternative cover was used and the days when soil cover was used.

(v) The Executive Secretary may revoke the use of any alternative daily cover at any landfill facility if any condition of R315-303-4(4)(c) is not met or if the alternative daily cover is determined to present a threat to human health or the environment.

(d) Materials not listed in R315-303-4(4)(b) may be used as alternative daily cover on an infrequent basis when the material meets the requirements of R315-303-4(4)(c) and the use is documented in the facility operating record.

(e) Materials not listed in R315-303-4(4)(b) which a facility owner or operator wants to use on an ongoing basis must be approved by the Executive Secretary. Executive Secretary approval is based on the material meeting the requirements of R315-303-4(4)(c).

Changes are made to establish the materials that can be used for alternative daily cover, the frequency of use, and the Executive Secretary's approval role for materials not listed. Also to make it clear that the Executive Secretary has the authority to revoke an alternative daily cover approval and to put into rule the guidance that has been in place that no alternative daily cover may be used for more than one week without providing soil cover for one day.

~~[(b)]~~(f) The Executive Secretary may, on a site specific basis, waive the requirement for daily cover of the waste at a landfill that accepts no municipal waste if the owner or operator demonstrates that an alternative schedule for covering the waste does not present a threat to human health or the environment. The demonstration from the owner or operator of the landfill must include at least the following:

- (i) certification that the landfill accepts no municipal waste;
- (ii) a detailed list of the waste types accepted by the landfill;
- (iii) the alternative schedule on which the waste will be covered; and
- (iv) any other operational practices that may reduce the threat to human health or the environment if an alternative schedule for covering the

waste is followed.

(v) In granting any waiver from the daily cover requirement, the Executive Secretary may place conditions on the owner or operator of the landfill as to the frequency of covering, depth of the cover, or type of material used as cover that will minimize the threat to human health or the environment.

(vi) The Executive Secretary may revoke any waiver from the daily cover requirement if any condition is not met or if the alternative schedule for covering the waste presents a threat to human health or the environment.

~~[(e)]~~ (g) If an area of the working face of a landfill that accepts municipal waste will not receive waste for a period longer than 30 days, the owner or operator shall cover the area with a minimum of 12 inches of soil as an intermediate cover or an alternative intermediate cover as approved by the Executive Secretary.

(i) No alternative intermediate cover will be approved by the Executive Secretary without application from the owner or operator.

(ii) Approval for an alternative intermediate cover may be granted after:

(A) considering the design of the landfill, waste stream accepted, and waste handling practices; and

(B) taking into account climatic, hydrogeologic, and soil conditions of the site.

(iii) In granting approval for an alternative intermediate cover, the Executive Secretary may place conditions on the owner or operator of the landfill as to the depth or type of material used and maintenance of the integrity of the cover that will minimize the threat to human health or the environment.

(iv) The Executive Secretary may revoke the approval of an alternative intermediate cover if any condition is not met or if the alternative intermediate cover is determined to present a threat to human health or the environment.

(5) Monitoring Systems. An owner or operator of a landfill shall maintain the monitoring systems required in Subsection R315-303-3~~[(6)]~~ (7)(b).

(6) Recycling Required.

(a) An owner or operator of a landfill at which the general public delivers household solid waste shall provide containers in which the general public may place recyclable materials for which a market exists that are brought to the site:

(i) during the normal hours of operation; and

(ii) at a location convenient to the public, i.e., near the entrance gate.

(b) An owner or operator may demonstrate alternative means to providing an opportunity for the general public to recycle household solid waste.

(7) Disposal of Hazardous Waste and Waste Containing PCBs.

(a) An owner or operator of a solid waste disposal facility shall not knowingly dispose, treat, store, or otherwise handle hazardous waste or waste containing PCBs except under the following conditions:

(i) hazardous waste:

(A) the waste meets the conditions specified in Subsections R315-2-4; or

(B) the waste meets the conditions specified in 40 CFR 261.5 (1996) as incorporated by reference in Section R315-2-5; or

(ii) waste containing PCB's:

(A) the facility meets the requirements specified in Subsection R315-315-7(3)(a); or

(B) the waste meets the requirements specified in Subsections R315-315-7(2) or (3)(b).

(b) An owner or operator of a solid waste disposal facility shall include and implement, as part of the plan of operation, a plan that will inspect loads or take other steps, as approved by the Executive Secretary, that will prevent the disposal of prohibited hazardous waste and prohibited waste containing PCBs, including:

(i) inspection frequency and inspection of loads suspected of containing prohibited hazardous waste or prohibited waste containing PCBs;

- (ii) inspection in a designated area or at a designated point in the disposal process;
 - (iii) a training program for the facility employees in identification of prohibited hazardous waste and prohibited waste containing PCBs; and
 - (iv) maintaining written records of all inspections, signed by the inspector.
- (c) If the receipt of prohibited hazardous waste or prohibited waste containing PCBs is discovered, the owner or operator of the facility shall:
- (i) notify the Executive Secretary, the hauler, and the generator within 24 hours;
 - (ii) restrict the inspection area from public access and from facility personnel; and
 - (iii) assure proper cleanup, transport, and disposal of the waste.

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